

**SUBCHAPTER B: LAND APPLICATION FOR BENEFICIAL USE AND  
STORAGE AT BENEFICIAL USE SITES  
§§312.41 - 312.50**

**§312.41. Applicability.**

(a) Application to land. This subchapter applies to any person who prepares sewage sludge that is applied to the land, to any person who applies sewage sludge to the land, to sewage sludge applied to the land, and to the land on which sewage sludge is applied.

(b) Bulk sewage sludge.

(1) When bulk sewage sludge is applied to the land and meets the metal concentrations in Table 3 of §312.43(b)(3) of this title (relating to Metal Limits), the Class A sewage sludge pathogen requirements in §312.82(a)(3) of this title (relating to Pathogen Reduction), and one of the vector attraction reduction requirements in §312.83(b)(1) - (8) of this title (relating to Vector Attraction Reduction), then the provisions of §312.42 of this title (relating to General Requirements) and §312.44 of this title (relating to Management Practices) do not apply with the exception of §312.44(a), (b), (h)(3), (j), and (m) of this title.

(A) When bulk sewage sludge that meets the metal concentrations in Table 3 of §312.43(b)(3) of this title, the Class AB pathogen requirements in

§312.82(a)(2) of this title, and one of the vector attraction reduction requirements in §312.83(b)(1) - (8) of this title, is applied to the land, then §312.44(a), (b), (c)(2)(D) and (E), (d), (h)(1), (3), (5) and (6), (j), (l), and (m) of this title will apply to the land application of sewage sludge.

(B) When bulk sewage sludge that meets the metal concentrations in Table 3 of §312.43(b)(3) of this title, the Class AB pathogen requirements in §312.82(a)(2) of this title, and one of the vector attraction reduction requirements in §312.83(b)(1) - (8) in addition to (9) or (10) of this title, then the requirements in subparagraph (A) of this paragraph do not apply with the exception of §312.44(a), (b), (h)(3), (j), and (m) of this title.

(2) The executive director may apply any or all of §312.42 and §312.44 of this title to the bulk sewage sludge described in this subsection on a case-by-case basis after determining that the general requirements or management practices are needed to protect public health and the environment from any reasonably anticipated adverse effect that may occur from any metal in the bulk sewage sludge.

(c) General Requirements for Bulk Derived Materials.

(1) When derived material from sewage sludge is applied to the land and meets the metal concentrations in Table 3 of §312.43(b)(3) of this title, the Class A

pathogen requirements in §312.82(a)(3) of this title, and one of the vector attraction reduction requirements in §312.83(b)(1) - (8) of this title, then the provisions of §312.42 and §312.44 of this title do not apply with the exception of §312.44(a), (b), (h)(3), (j), and (m) of this title.

(A) When bulk sewage sludge that meets the metal concentrations in Table 3 of §312.43(b)(3) of this title, the Class AB pathogen requirements in §312.82(a)(2) of this title, and one of the vector attraction reduction requirements in §312.83(b)(1) - (8) of this title is applied to the land, then §312.44(a), (b), (c)(2)(D) and (E), (d), (h)(1), (3), (5), and (6), (j), (l), and (m) of this title will apply to the land application of sewage sludge.

(B) When bulk sewage sludge that meets the metal concentrations in Table 3 of §312.43(b)(3) of this title, the Class AB pathogen requirements in §312.82(a)(2) of this title, and one of the vector attraction reduction requirements in §312.83(b)(1) - (8) in addition to (9) or (10) of this title, is applied to the land, then the requirements in subsection (b)(1)(A) of this section do not apply with the exception of §312.44(a), (b), (h)(3), (j), and (m) of this title.

(2) The executive director may apply any or all of §312.42 and §312.44 of this title to the bulk material described in this subsection on a case-by-case basis after determining that the general requirements or management practices are needed to

protect public health and the environment from any reasonably anticipated adverse effect that may occur from any metal in the bulk sewage sludge.

(d) Special Requirements for Certain Bulk Derived Materials. The requirements in this subchapter may not apply when a bulk material derived from sewage sludge is applied to the land; if the sewage sludge from which the bulk material is derived meets the metal concentrations in Table 3 of §312.43(b)(3) of this title the Class A or Class AB pathogen requirements in §312.82(a) of this title, and one of the vector attraction reduction requirements in §312.83(b)(1) - (8) of this title. The executive director may apply any or all of §312.42 and §312.44 of this title to the bulk derived material on a case-by-case basis after determining that the general requirements or management practices are needed to protect public health and the environment from any reasonably anticipated adverse effect that may occur from any metal in the sewage sludge.

(e) Bagged sludge. Sewage sludge sold or given away in a bag or other container for application to the land. Section 312.42 and §312.44 of this title may not apply when sewage sludge is sold or given away in a bag or other container for application to the land if the sewage sludge sold or given away in a bag or other container for application to the land meets the metal concentrations in Table 3 of §312.43(b)(3) of this title, the Class A or Class AB pathogen requirements in §312.82(a) of this title, and one of the vector attraction reduction requirements in §312.83(b)(1) - (8) of this title.



(f) Bagged derived materials. Section 312.42 and §312.44 of this title may not apply when a material derived from sewage sludge is sold or given away in a bag or other container for application to the land if the derived material meets the metal concentrations in §312.43(b) of this title, the Class A or Class AB pathogen requirements in §312.82(a) of this title, and one of the vector attraction reduction requirements in §312.83(b)(1) - (8) of this title.

(g) Bagged materials. The requirements in this subchapter may not apply when a material derived from sewage sludge is sold or given away in a bag or other container for application to the land if the sewage sludge from which the material is derived meets the metal concentrations in Table 3 of §312.43(b)(3) of this title, the Class A or Class AB pathogen requirements in §312.82(a) of this title, and one of the vector attraction reduction requirements in §312.83(b)(1) - (8) of this title.

**Source Note:** The provisions of this §312.41 adopted to be effective October 13, 1995, 20 TexReg 7840; amended to be effective October 2, 2014, 39 TexReg 7756.

**§312.42. General Requirements.**

(a) No person shall apply sewage sludge, including domestic septage, to the land except in accordance with the requirements in this subchapter.

(b) No person shall apply sewage sludge that does not meet the metal concentrations in Table 3 of §312.43(b)(3) of this title (relating to Metal Limits) to land where any of the cumulative metal loading rates in Table 2 of §312.43(b)(2) of this title have been reached.

(c) No person shall apply domestic septage to agricultural land, forest, or a reclamation site during a 365-day period where the annual application rate in §312.43(c) of this title has been reached.

(d) The person who applies sewage sludge, including domestic septage, to the land shall obtain information needed to comply with the requirements in this subchapter.

(e) If a treatment works provides bulk sewage sludge to a person who applies the bulk sewage sludge to the land, the treatment works shall provide the person who applies the bulk sewage sludge to the land notice and necessary information to comply with the requirements in this subchapter.

(f) If a treatment works provides bulk sewage sludge to a person who prepares the bulk sewage sludge for application to the land, the treatment works shall provide the person who prepares the bulk sewage sludge for application to the land notice and necessary information to comply with the requirements in this subchapter.

(g) The person who applies bulk sewage sludge to the land shall provide the owner or lease-holder of the land on which the bulk sewage sludge is applied notice and necessary information to comply with the requirements in this subchapter.

(h) If a treatment works provides sewage sludge to a person who prepares the sewage sludge for sale or give away in a bag or other container for application to the land, the treatment works shall provide the person who prepares the sewage sludge for sale or give away in a bag or other container for application to the land notice and information to comply with the requirements in this subchapter.

(i) The applicant shall determine the concentration of regulated metals in accordance with §312.12(b)(1)(I) of this title (relating to Registrations) and demonstrate to the satisfaction of the commission that the proposed cumulative metal loading will result in a non-toxic condition or reduce the toxicity of the existing soil.

**Source Note:** The provisions of this §312.42 adopted to be effective October 13, 1995, 20 TexReg 7840; amended to be effective October 2, 2014, 39 TexReg 7756.

#### **§312.43. Metal Limits.**

(a) Sewage sludge.

(1) Bulk sewage sludge or sewage sludge sold or given away in a bag or other container shall not be applied to the land if the concentration of any metal in the sewage sludge exceeds the ceiling concentration for the metal in Table 1 of subsection (b) of this section.

(2) If the bulk sewage sludge is applied to agricultural land, forest, a public contact site, or a reclamation site, either:

(A) the cumulative loading rate for each metal shall not exceed the cumulative metal loading rate for the metal in Table 2 of subsection (b) of this section;  
or

(B) the concentration of each metal in the sewage sludge shall not exceed the concentration for the metal in Table 3 of subsection (b) of this section.

(3) If bulk sewage sludge is applied to a lawn or a home garden, the concentration of each metal in the sewage sludge shall not exceed the concentration for the metal in Table 3 of subsection (b) of this section.

(4) If sewage sludge is sold or given away in a bag or other container for application to the land, either:

(A) the concentration of each metal in the sewage sludge shall not exceed the concentration for the metal in Table 3 in subsection (b) of this section; or

(B) the product of the concentration of the each pollutant in the sewage sludge and the annual sludge application rate for the sewage sludge shall not cause the annual metal loading rate for the metal in Table 4 of subsection (b) of this section to be exceeded. The procedure used to determine the annual whole sludge application rate is presented in §312.49 of this title (relating to Appendix A-Procedure to Determine the Annual Whole Sludge Application Rate for a Sewage Sludge).

(b) Metal concentrations and loading rates--sewage sludge.

(1) Ceiling concentrations.

Figure: 30 TAC §312.43(b)(1)

TABLE 1 - METAL CEILING CONCENTRATIONS

<b>Metal</b>	<b>Concentration (Milligrams per kilogram)*</b>
Arsenic	75
Cadmium	85
Chromium	3,000

Copper	4,300
Lead	840
Mercury	57
Molybdenum	75
Nickel	420
Selenium	100
Zinc	7,500

\* Dry weight basis

(2) Cumulative metal loading rates.

Figures 2: 30 TAC §312.43 (b)(2)

TABLE 2 - CUMULATIVE Metal LOADING Rate

Metal	Cumulative Metal Loading	
	(kilograms per hectare)*	(pounds per acre)*
Arsenic	41	36
Cadmium	39	35
Chromium	3000	2677
Copper	1500	1339
Lead	300	268
Mercury	17	15
Molybdenum	Monitor	Monitor
Nickel	420	375
Selenium	100	89
Zinc	2800	2500

\* Dry weight basis (3) Metal concentrations.

Figure: 30 TAC §312.43(b)(3)

TABLE 3 - METAL CONCENTRATIONS

<b>Metal</b>	<b>Concentration (Milligrams per kilogram)*</b>
Arsenic	41
Cadmium	39
Chromium	1,200
Copper	1,500
Lead	300
Mercury	17
Molybdenum	Monitor
Nickel	420
Selenium	36
Zinc	2,800

\* Dry weight basis

(4) Annual Metal loading rates.

Figure 4: 30 TAC §312.43 (b)(4)

TABLE 4 - ANNUAL METAL LOADING RATES

<b>Metal</b>	<b>Annual Metal Loading Rate**</b>	
	<b>(kilograms per hectare)*</b>	<b>(pounds per acre)*</b>
Arsenic	2.0	1.8

Cadmium	1.9	1.7
Chromium	150.0	134.0
Copper	75.0	67.0
Lead	15.0	13.0
Mercury	0.85	0.76
Molybdenum	Monitor	Monitor
Nickel	21.0	18.7
Selenium	5.0	4.5
Zinc	140.0	125.0

\* Dry weight basis

\*\* Per 365 day period

(c) Domestic Septage. The annual application rate for domestic septage applied to agricultural land, forest, or a reclamation site shall be equal to or less than the annual application rate calculated using equation 1.  $AAR = N / 0.0026$ , where AAR = Annual application rate in gallons per acre per 365-day period; N = Amount of nitrogen in pounds per acre per 365-day period needed by the crop or vegetation grown on the land.

**Source Note:** The provisions of this §312.43 adopted to be effective October 13, 1995, 20 TexReg 7840.

**§312.44. Management Practices.**

(a) Land application of bulk sewage sludge must not cause or contribute to the harm of a threatened or endangered species of plant, fish, or wildlife or result in the



destruction or adverse modification of the critical habitat of a threatened or endangered species.

(b) Bulk sewage sludge must not be applied to agricultural land, forest, a public contact site, or a reclamation site that is flooded, frozen, or snow-covered so that the bulk sewage sludge enters a wetland or other water in the state, except as provided in a permit issued under Chapter 305 of this title (relating to Consolidated Permits) or federal Clean Water Act, §404.

(c) When bulk sewage sludge that does not meet Class A pathogen requirements or domestic septage is applied to agricultural land, forest, or a reclamation site, buffer zones must be established for each application area as noted in this section unless otherwise specified by the commission.

(1) Surface water:

(A) 200-foot buffer zone, if the sludge is not incorporated; for land application sites located in a major sole-source impairment zone this buffer zone must maintain a vegetative cover; or

(B) 33-foot vegetative buffer zone, if the sludge is incorporated.

(2) Other buffer zones:

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(A) 150 feet, private water supply well;

(B) 500 feet, public water supply well, intake, spring or similar source, public water supply treatment plant, or public water supply elevated or ground storage tank;

(C) 200 feet, solution channel, sinkhole, or other conduit to groundwater;

(D) 750 feet, established school, institution, business, or occupied residential structure;

(E) 50 feet, public right-of-way and property boundaries; and

(F) 10 feet, irrigation conveyance canal.

(3) Buffer zone requirements established in subsections (c)(1) and (c)(2) of this section apply to permits or registrations for land application of bulk sewage sludge or domestic septage as follows:

(d) ~~(A)~~ Permits and registrations issued prior to the effective date of these regulations may continue to operate under the buffer zone requirements of their current permit or registration, and in accordance with other buffer zone requirements of this subsection;

(AB) The above buffer zone requirements ~~apply to the~~ are applicable for purposes of the initial issuance ~~for~~ of a new permit or registration;

(BE) The above buffer zone requirements ~~apply~~ are applicable to any amendment of a permit or registration seeking to expand in which the area of the land application unit, except that the above buffer zone requirements are limited to the area to be added to the land application unit and are not applicable to ~~is expanded beyond the boundaries of any land application units area identified for in the existing permitted or registered facility; except that existing land application areas retain the buffer zone requirements of the existing permit or registration;~~

(CD) For renewals of permits and registrations and for amendments of permits and registrations that do not expand the area of the land application unit, the application of buffer zone requirements in the renewal or amendment shall not cause the land application unit area to be reduced ~~are not~~

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applicable, of the existing permit or registration will continue to apply for the renewed or amended permit or registration, unless otherwise specified by the commission.

(D) Permits and registrations in effect on the effective date of these regulations are subject only to the buffer zone requirements of their current permit or registration, and in accordance with subsections (c)(3)(b) and (c)(3)(C) of this section.

(4) ~~Changes to existing buffer zones resulting from changes~~ Modifications in off-site land uses with buffer zone requirements in subsections (c)(1) and (c)(2) of this section will not require any corresponding the adjustment to an the of land application areas unit on of a permitted facility for land application of bulk sewage sludge or a permitted or registered facility for land application of domestic septage, unless otherwise required by the commission or by agreement of affected landowners as specified in subsection (d) of this section. For purposes of this subsection, "off-site land uses" refers to any of the uses identified in subsections (c)(1) and (c)(2) of this section that are performed by someone other than the permittee or registrant on property adjacent to the property in which the permittee or registrant has a property interest that is subject to the permit or registration.

(d) Any of the buffers established in subsection (c)(2)(D) and (E) of this section may be reduced or eliminated if an agreement to that effect is signed by the owners of the established school, institution, business, occupied residential structure, or adjacent

property and this documentation is provided to the executive director prior to issuance of a permit or registration. Reductions or elimination of buffer zones in an existing permit or registration by agreement of the affected landowner will be considered a minor amendment of the permit or registration. Any such agreement must be filed in the real property records for each tract of land to which the agreement applies, and such agreement runs with the land for purposes of this section.

(e) Bulk sewage sludge must be applied to agricultural land, forest, or a public contact site at a whole sludge application rate that is equal to or less than the agronomic rate for the agricultural land, forest, or public contact site on which the bulk sewage sludge is applied.

(f) Bulk sewage sludge must be applied to a reclamation site at a whole application rate that is equal to or less than the agronomic rate for the reclamation site on which the bulk sewage sludge is applied, unless otherwise specified by the commission. On a case-by-case basis, a whole sludge application rate may exceed the agronomic rate for a specific time period.

(g) Groundwater protection measures.

(1) A seasonal high groundwater table must be not less than three feet below the treatment zone for soils with moderate or slower permeability (less than two inches per hour).

(2) A seasonal high groundwater table must be not less than four feet below the treatment zone for soils with moderately rapid or rapid permeability (greater than two inches per hour and less than 20 inches per hour).

(3) Seasonal generally refers to a groundwater table that may be perched on a less permeable soil or geologic unit and fluctuates with seasonal climatic variation or that occurs in a soil or geologic unit as a variation in saturation due to seasonal climatic conditions and is identified as such in a published soil survey report or similar document.

(4) Application of sludge to land having soils with greater permeability and with higher groundwater tables will be considered on a case-by-case basis, after consideration of soil pH, metal loadings onto the soil, soil buffering capacity, or other protective measures to prevent groundwater contamination.

(h) Sludge must be applied by a method and under conditions that prevent runoff of sewage sludge beyond the active application area and protect the quality of the surface water and the soils in the unsaturated zone.

(1) Sludge must be applied uniformly over the surface of the land.

(2) Sludge may not be applied to areas where permeable surface soils are less than two feet thick. The executive director will consider sites with thinner permeable surface soils, on a case-by-case basis.

(3) Sewage sludge may not be applied during rainstorms or during periods in which surface soils are water-saturated, and when pooling of water is evident on the land application site. The operator of a TCEQ permitted or bulk sewage sludge site subject to the notification requirements in §312.4(b) of this title (relating to Required Authorizations or Notifications) who land applies sewage sludge on agricultural land shall submit an Adverse Weather and Alternative Plan. This plan shall detail procedures to address times when the sewage sludge cannot be applied to the land application site due to adverse weather or other conditions such as wind, precipitation, field preparation delays, and access road limitations.

(4) Sludge may not be applied to areas having topographical slopes in excess of 8.0%. On a case-by-case basis, the executive director will consider sites with steeper slopes when runoff controls are proposed and utilized, incorporation of sewage sludge into the soil occurs, or for certain reclamation projects.

(5) Where runoff of sludge from the active application area is evident, the operator shall cease further sludge application until the condition is corrected.

(6) Sewage sludge may not be applied under provisions of this section on land within a designated floodway.

(i) Either a label must be affixed to the bag or other container in which sewage sludge is sold or given away for application to the land or an information sheet must be provided to the person who receives sewage sludge sold or given away in another container for application to the land. The label or information sheet must contain the following information:

(1) the name and address of the person who prepared the sewage sludge for sale or given away in a bag or other container for application to the land;

(2) a statement that prohibits the application of the sewage sludge to the land except in accordance with the instructions on the label or information sheet; and

(3) the annual whole sludge application rate for the sewage sludge that does not cause the annual metal loading rates in Table 4 of §312.43(b)(4) of this title (relating to Metal Limits) to be exceeded.



(j) Nuisance controls.

(1) A land application site location must be selected and the site operated in a manner to prevent public health nuisances.

(2) Sewage sludge debris must be prevented from blowing or running off site boundaries or into surface waters.

(3) To prevent nuisance conditions from occurring, the operator shall:

(A) minimize dust migration from the site and access roadways;

(B) minimize offensive odors through incorporation of sewage sludge into the soil or by taking some other type of corrective action; and

(C) develop and implement best management practices (BMPs) to minimize off-site tracking of sewage sludge and sediment during the transport of sewage sludge material to and from the land application site or storage area; and to include at a minimum, removing tracked material, to the extent practicable, by the end of each day of operation at the site and either returning it to the site or otherwise disposing of it properly. The documented BMPs shall be retained by the operator and made by readily available for review by a TCEQ representative.

(4) Odor Control. Pursuant to the authority vested in the commission or executive director in §312.6 of this title (relating to Additional or More Stringent Requirements), a person who prepares sewage sludge or land applies sewage sludge on agricultural land may be subject to an Odor Control Plan on a case-by-case basis.

(k) A permit or registration must specify the soil testing requirements for each application area.

(1) The testing frequency must take into account common agricultural methods of determining cover crop nutrient needs, soil pH, phytotoxicity, and concentrations of metals regulated by this chapter.

(2) No authorization may require soil testing of metals regulated by this chapter, at a frequency greater than once per five years or prior to submittal of a renewal application for a beneficial use site. Soil testing for metals regulated by this chapter may not be required for portions of the authorized site where sewage sludge has not been applied since the last soil metals testing was performed.

(3) Paragraph (2) of this subsection does not apply if the executive director becomes aware of circumstances warranting increased monitoring of metals regulated

by this chapter, in order to address sites where metal loading into the soil is a threat to human health or environmental quality.

(l) An operator of a Class AB or Class B sewage sludge site shall post a sign that is visible from a publically accessible road or sidewalk that is adjacent to the premises on which the land application unit is located stating that a sewage sludge beneficial land application site is located on the premises. The sign shall be posted three days prior to and 14 days after the commencement of land application of sewage sludge and shall include the operator name, telephone number, the classification of sewage sludge and the TCEQ authorization number. In the event of reasonably unforeseen circumstances such as weather conditions or equipment failure that necessitate a change in a planned land application site, the required sign may be posted on the day on which sewage sludge land application commences. If signs are posted less than three days prior to land application, records shall be maintained documenting the unforeseeable circumstance that necessitated the change in a planned land application site. Such records shall be retained by the operator and be readily available for review by a TCEQ representative. Records of any deviation of the posting requirements listed in this subsection and associated reasons shall be retained by the operator and be readily available for review by a TCEQ representative.

(m) All vehicles and equipment used for the transport of bulk Class A, Class AB or Class B sewage sludge for land application or disposal shall be constructed, operated,

and maintained to prevent the loss of liquid or solid materials during transport. An operator of a Class A, Class AB or Class B bulk sewage sludge site may not accept bulk sewage sludge, unless the sludge is transported to the land application unit in a covered container with the covering firmly secured at the front and back.

**Source Note:** The provisions of this §312.44 adopted to be effective October 13, 1995, 20 TexReg 7840; amended to be effective October 20, 2005, 30 TexReg 6743; amended to be effective October 2, 2014, 39 TexReg 7756.

**§312.45. Operational Standards--Pathogens and Vector Attraction.**

(a) Pathogens.

(1) The Class A or Class AB sewage sludge pathogen requirements in §312.82(a) of this title (relating to Pathogen Reduction) or Class B sewage sludge pathogen requirements in §312.82(b) of this title shall be met if bulk sewage sludge is applied to agricultural land, forest, a public contact site, or a reclamation site.

(2) The Class A or Class AB sewage sludge pathogen requirements in §312.82(a) of this title shall be met if bulk sewage sludge is applied to a lawn or a home garden.

(3) The Class A or Class AB sewage sludge pathogen requirements in §312.82(a) of this title shall be met if sewage sludge is sold or given away in a bag or other container for application to the land.

(4) The requirements in §312.82(c) of this title shall be met if domestic septage is applied to agricultural land, forest, or a reclamation site.

(b) Vector attraction reduction.

(1) One of the vector attraction reduction requirements in §312.83(b)(1) - (10) of this title (relating to Vector Attraction Reduction) shall be met if bulk sewage sludge is applied to agricultural land, forest, a public contact site, or a reclamation site.

(2) One of the vector attraction reduction requirements in §312.83(b)(1) - (8) of this title shall be met if bulk sewage sludge is applied to a lawn or a home garden.

(3) One of the vector attraction reduction requirements in §312.83(b)(1) - (8) of this title shall be met if sewage sludge is sold or given away in a bag or other container for application to the land.

(4) The vector attraction reduction requirements in §312.83(b)(12) of this title shall be met if domestic septage is applied to agricultural land, forest, or a public contact site.

**Source Note:** The provisions of this §312.45 adopted to be effective October 13, 1995, 20 TexReg 7840; amended to be effective October 2, 2014, 39 TexReg 7756.

**§312.46. Frequency of Monitoring.**

(a) Sewage sludge (other than domestic septage).

(1) The frequency of monitoring for the metals listed in §312.43(b)(1)-(4) of this title (relating to Metal Limits); the pathogen density requirements in either §312.82(a) or (b)(1)(C) and (b)(2) of this title (relating to Pathogen Reduction); and vector attraction reduction requirements in §312.83(b)(1)-(8) of this title (relating to Vector Attraction Reduction) are defined in Table 5.

Figure: 30 TAC §312.46(a)(1)

TABLE 5 - FREQUENCY OF MONITORING - LAND APPLICATION

Amount of sewage sludge* (metric tons per 365-day period)	Frequency
0 to less than 290	once per year
290 to less than 1,500	once per quarter

1,500 to less than 15,000	once per 60 days
15,000 or greater	once per month

\* Either the amount of bulk sewage sludge applied to the land or the amount of sewage sludge received by a person who prepares the sewage sludge for sale or give away in a bag or other container for application to the land - dry weight basis.

(2) After the sewage sludge has been monitored for two years at the frequency shown in paragraph (1) of this subsection (Table 5), the executive director may reduce the frequency of monitoring for pollutant concentrations and for the pathogen density requirements, but in no case shall the frequency of monitoring be less than once per year when sewage sludge is applied to the land. A reduction in monitoring will be allowed after agency review of a significant data set of sample results and where the city or cities generating the sewage sludge have in place a satisfactory and enforceable pretreatment program.

(3) After the sewage sludge has been monitored for two years at the frequency shown in paragraph (1) of this subsection (Table 5), the executive director may increase the frequency of monitoring for pollutant concentrations and for the pathogen density requirements. An increase in monitoring will be required after agency review of a significant data set of sample results and where high pollutant or pathogen values are present in sewage sludge generated.

(b) Domestic septage applied to agricultural land, forest, or a reclamation site shall be monitored for the pathogen reduction requirements in §312.82(c) of this title (relating to Pathogen Reduction) and the vector attraction reduction requirements in §312.83(b)(12) of this title (relating to Vector Attraction Reduction).

**Source Note:** The provisions of this §312.46 adopted to be effective October 13, 1995, 20 TexReg 7840.

**§312.47. Record Keeping.**

(a) Sewage sludge.

(1) The person who prepares the sewage sludge in §312.41(b)(1) or (e) of this title (relating to Applicability) shall develop the following information and shall retain the information for five years:

(A) the concentration of each metal listed in Table 3 of §312.43(b)(3) of this title (relating to Metal Limits) in the sewage sludge;

(B) the following certification statement: "I certify, under penalty of law, that the Class A (or insert Class AB) sewage sludge pathogen requirements in 30 TAC §312.82(a) and the vector attraction reduction requirement in (insert one of the



vector attraction reduction requirements in 30 TAC §312.83(b)(1) - (8)) have been met. This determination has been made under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate the information used to determine that the pathogen requirements and vector attraction reduction requirements have been met. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment";

(C) a description of how the Class A or Class AB sewage sludge pathogen requirements in §312.82(a) of this title (relating to Pathogen Reduction) are met; and

(D) a description of how one of the vector attraction reduction requirements in §312.83(b)(1) - (8) of this title (relating to Vector Attraction Reduction) is met.

(2) The person who derives the material in §312.41(c)(1) or (f) of this title shall develop the following information and shall retain the information for five years:

(A) the concentration of each metal listed in Table 3 of §312.43(b)(3) of this title in the material;

(B) the following certification statement: "I certify, under penalty of law, that the Class A (or insert Class AB) sewage sludge pathogen requirements in 30 TAC §312.82(a) and the vector attraction reduction requirement in (insert one of the vector attraction reduction requirements in 30 TAC §312.83(b)(1) - (8)) have been met. This determination has been made under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate the information used to determine that the pathogen requirements and the vector attraction reduction requirements have been met. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment";

(C) a description of how the Class A or Class AB sewage sludge pathogen requirements in §312.82(a) of this title are met; and

(D) a description of how one of the vector attraction reduction requirements in §312.83(b)(1) - (8) of this title is met.

(3) If the metal concentrations in Table 3 of §312.43(b)(3) of this title, the Class A or Class AB sewage sludge pathogen requirements in §312.82(a) of this title, and the vector attraction reduction requirements in either §312.83(b)(9) or (10) of this title are met when bulk sewage sludge is applied to agricultural land, forest, a public contact site, or a reclamation site:

(A) The person who prepares the bulk sewage sludge shall develop the following information and shall retain the information for five years:

(i) the concentration of each metal listed in Table 3 of §312.43(b)(3) of this title in the bulk sewage sludge;

(ii) the following certification statement: "I certify, under penalty of law, that the pathogen requirements in 30 TAC §312.82(a) have been met. This determination has been made under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate the information used to determine that the pathogen requirements have been met. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment."; and

(iii) a description of how the pathogen requirements in §312.82(a) of this title are met.

(B) The person who applies the bulk sewage sludge shall develop the following information and shall retain the information for five years:

(i) the following certification statement: "I certify, under penalty of law, that the management practices in 30 TAC §312.44 and the vector attraction reduction requirement in (insert either 30 TAC §312.83(b)(9) or (10)) have been met. This determination has been made under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate the information used to determine that the management practices and vector attraction reduction requirements have been met. I am aware that there are significant penalties for false certification including fine and imprisonment";

(ii) a description of how §312.44 of this title (relating to Management Practices) are met for each site on which bulk sewage sludge is applied; and

(iii) a description of how the vector attraction reduction requirements in either §312.83(b)(9) or (10) of this title are met for each site on which bulk sewage sludge is applied.

(4) If the metal concentrations in Table 3 of §312.43(b)(3) of this title and the Class B pathogen requirements in §312.82(b) of this title are met when bulk sewage sludge is applied to agricultural land, forest, a public contact site, or a reclamation site:

(A) The person who prepares the bulk sewage sludge shall develop the following information and shall retain the information for five years:

(i) the concentration of each metal listed in Table 3 of §312.43(b)(3) of this title in the bulk sewage sludge;

(ii) the following certification statement: "I certify under, penalty of law, that the Class B sewage sludge pathogen requirements in 30 TAC §312.82(b) and the vector attraction reduction requirement in (insert one of the vector attraction reduction requirements in 30 TAC §312.83(b)(1) - (8) if one of those requirements is met) have been met. This determination has been made under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate the information used to determine that the pathogen requirements have been met. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment";

(iii) a description of how the Class B sewage sludge pathogen requirements in §312.82(b) of this title are met; and

(iv) when one of the vector attraction reduction requirements in §312.83(b)(1) - (8) of this title is met, a description of how the vector attraction reduction requirement is met.

(B) The person who applies the bulk sewage sludge shall develop the following information and shall retain the information for five years:

(i) the following certification statement: "I certify, under penalty of law, that the management practices in 30 TAC §312.44, the site restrictions in 30 TAC §312.82(b)(3), and the vector attraction reduction requirements in (insert either 30 TAC §312.83(b)(9) or (10), if one of those requirements is met) have been met for each site on which bulk sewage sludge is applied. This determination has been made under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate the information used to determine that the management practices and site restrictions (and the vector attraction reduction requirements if applicable) have been met. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment";

(ii) a description of how §312.44 of this title are met for each site on which bulk sewage sludge is applied;

(iii) a description of how the site restrictions in §312.82(b)(3) of this title are met for each site on which bulk sewage sludge is applied; and

(iv) when the vector attraction reduction requirement in either §312.83(b)(9) or (10) of this title is met, a description of how the vector attraction reduction requirement is met.

(5) If the requirements in §312.43(a)(2)(A) of this title are met when bulk sewage sludge is applied to agricultural land, forest, a public contact site, or a reclamation site:

(A) The person who prepares the bulk sewage sludge shall develop the following information and shall retain the information for five years:

(i) the concentration of each metal listed in Table 1 of §312.43(b)(1) of this title in the bulk sewage sludge;

(ii) the following certification statement: "I certify, under penalty of law, that the pathogen requirements in (insert either 30 TAC §312.82(a) or (b)) and the vector attraction reduction requirement in (insert one of the vector attraction reduction requirements in 30 TAC §312.83(b)(1) - (8) if one of those requirements is met) have been met. This determination has been made under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate the information used to determine that

the pathogen requirements have been met. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment";

(iii) a description of how the pathogen requirements in either §312.82(a) or (b) of this title are met;

(iv) when one of the vector attraction requirements in §312.83(b)(1) - (8) of this title is met, a description of how the vector attraction requirement is met.

(B) The person who applies the bulk sewage sludge shall develop the following information, retain the information in clauses (i) - (vii) of this subparagraph indefinitely, and retain the information in clause (viii) - (xiii) of this subparagraph, for five years:

(i) the location, by either street address or latitude and longitude, of each site on which bulk sewage sludge is applied;

(ii) the number of acres in each site on which bulk sewage sludge is applied;



(iii) the date and time bulk sewage sludge is applied to each site;

(iv) the cumulative amount of each metal (i.e., kilograms) listed in Table 2 of §312.43(b)(2) of this title in the bulk sewage sludge applied to each site, including the amount in §312.42(e) of this title (relating to General Requirements);

(v) the amount of sewage sludge (i.e., metric tons) applied to each site;

(vi) the following certification statement: "I certify, under penalty of law, that the requirements to obtain information in 30 TAC §312.42(e) have been met for each site on which bulk sewage sludge is applied. This determination has been made under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate the information used to determine that the requirements to obtain information have been met. I am aware that there are significant penalties for false certification including fine and imprisonment";

(vii) a description of how the requirements to obtain information in §312.42(e) of this title are met;

(viii) the following certification statement: "I certify, under penalty of law, that the management practices in 30 TAC §312.44 have been met for each site on which bulk sewage sludge is applied. This determination has been made under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate the information used to determine that the management practices have been met. I am aware that there are significant penalties for false certification including fine and imprisonment";

(ix) a description of how §312.44 of this title are met for each site on which bulk sewage sludge is applied;

(x) the following certification statement when the bulk sewage sludge meets the Class B pathogen requirements in §312.82(b) of this title: "I certify, under penalty of law, that the site restrictions in 30 TAC §312.82(b)(3) have been met. This determination has been made under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate the information used to determine that the site restrictions have been met. I am aware that there are significant penalties for false certification including fine and imprisonment";

(xi) a description of how the site restrictions in §312.82(b)(3) of this title are met for each site on which Class B bulk sewage sludge is applied;

(xii) the following certification statement when the vector attraction reduction requirement in either §312.83(b)(9) or (10) of this title is met: "I certify, under penalty of law, that the vector attraction reduction requirement in (insert either 30 TAC §312.83(b)(9) or (10)) has been met. This determination has been made under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate the information used to determine that the vector attraction reduction requirement has been met. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment"; and

(xiii) if the vector attraction reduction requirements in either §312.83(b)(9) or (10) of this title are met, a description of how the requirements are met.

(6) If the requirements in §312.43(a)(4)(B) of this title are met when sewage sludge is sold or given away in a bag or other container for application to the land, the person who prepares the sewage sludge that is sold or given away in a bag or other container shall develop the following information and shall retain the information for five years:

(A) the annual whole sludge application rate for the sewage sludge that does not cause the annual metal loading rates in Table 4 of §312.43(b)(4) of this title to be exceeded;

(B) the concentration of each metal listed in Table 4 of §312.43(b)(4) of this title in the sewage sludge;

(C) the following certification statement: "I certify, under penalty of law, that the management practice in 30 TAC §312.44(e), the Class A (or insert Class AB) sewage sludge pathogen requirement in 30 TAC §312.82(a), and the vector attraction reduction requirement in (insert one of the vector attraction reduction requirements in §312.83(b)(1) - (8)) have been met. This determination has been made under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate the information used to determine that the management practice, pathogen requirements, and vector attraction reduction requirements have been met. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment";

(D) a description of how the Class A or Class AB sewage sludge pathogen requirements in §312.82(a) of this title are met;

(E) a description of how one of the vector attraction requirements in §312.83(b)(1) - (8) of this title is met.

(b) Domestic septage. When domestic septage is applied to agricultural land, forest, or a reclamation site, the person who applies the domestic septage shall develop the following information and shall retain the information for five years:

(1) the location, by either street address or latitude and longitude, of each site on which domestic septage is applied;

(2) the number of acres in each site on which domestic septage is applied;

(3) the date and time domestic septage is applied to each site;

(4) the nitrogen requirement for the crop or vegetation grown on each site during a 365-day period;

(5) the rate, in gallons per acre per 365-day period, at which domestic septage is applied to each site;

(6) The following certification statement: "I certify, under penalty of law, that the pathogen requirements in (insert either 30 TAC §312.82(c)(1) or (2)) and the

vector attraction reduction requirements in (insert 30 TAC §312.83(b)(9), (10), or (12)) have been met. This determination has been made under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate the information used to determine that the pathogen requirements and vector attraction reduction requirements have been met. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment”;

(7) a description of how the pathogen requirements in either §312.82(c)(1) or (2) of this title are met;

(8) a description of how the vector attraction reduction requirements in §312.83(b)(9), (10), or (12) of this title are met.

**Source Note:** The provisions of this §312.47 adopted to be effective October 13, 1995, 20 TexReg 7840; amended to be effective October 2, 2014, 39 TexReg 7756.

**§312.48. Reporting.**

Unless otherwise specified by the commission, sludge management facilities shall submit the following information to the Enforcement Division, the Wastewater Permitting Section of the Water Quality Division, and the appropriate regional office:

(1) annually by September 30 of each year:

(A) the information in §312.47 of this title (relating to Record Keeping) for the applicable requirements;

(B) the information in §312.47(a)(5)(A)(i) - (iv) of this title if:

(i) the sewage sludge does not meet the metal concentrations in §312.43(b)(3) of this title (relating to Metal Limits);

(ii) 90% or more of any of the cumulative metal loading rates in §312.43(b)(2) of this title is reached at a site; or

(iii) sewage sludge is applied to a site after 90% of any of the cumulative metal loading rates is reached at the site; and

(C) for the Class B sewage sludge beneficial land application permit holder:

(i) evidence that the permit holder is complying with the nutrient management plan developed by a certified nutrient management specialist in

accordance with the United States Department of Agriculture Natural Resource  
Conservation Service Practice Standard Code 590;

(ii) a completed Annual Sludge Summary Report Form; and

(iii) proof of continuation of commercial liability insurance  
and environmental impairment insurance; and

(2) for the Class B sewage sludge beneficial land use permit holder, submit  
quarterly reports by the 15th day of the month following each quarter. Quarterly reports  
are due December 15th, March 15th, June 15th, and September 15th and must include:

(A) a Quarterly Sludge Summary Report form; and

(B) a computer-generated quarterly report containing:

(i) the source, quality, and quantity of sludge applied to the  
land application unit;

(ii) the location of the land application unit, either in terms  
of longitude and latitude or by physical address, including the county;



(iii) the dates of delivery of Class B sewage sludge;

(iv) the dates of application of Class B sewage sludge;

(v) the cumulative amount of metals applied to the land application unit through the application of Class B sewage sludge;

(vi) crops grown at the land application unit site; and

(vii) the suggested agronomic application rate for the Class B sewage sludge.

**Source Note:** The provisions of this §312.48 adopted to be effective October 13, 1995, 20 TexReg 7840; amended to be effective October 20, 2005, 30 TexReg 6743.

**§312.49. Appendix A--Procedure To Determine the Annual Whole Sludge Application Rate for a Sewage Sludge.**

Section 312.43(a)(4)(B) of this title (relating to Metal Limits) requires that the product of the concentration for each metal listed in Table 4 of §312.43 of this title in sewage sludge sold or given away in a bag or other container for application to the land and the annual whole sludge application rate (AWSAR) for the sewage sludge not cause the annual metal loading rate for the metal in Table 4 of §312.43(b)(4) of this title to be

exceeded. This appendix contains the procedure used to determine the AWSAR for a sewage sludge that does not cause the annual metal loading rates in Table 4 of §312.43(b)(4) of this title to be exceeded.

(1) The relationship between the annual metal loading rate (AMLR) for a metal and the annual whole sludge application rate (AWSAR) for a sewage sludge is shown in equation (1).

Figure: 30 TAC §312.49(1)

$$\text{AMLR} = C \times \text{AWSAR} \times 0.001 \quad (1)$$

Where:

**AMLR** = Annual metal loading rate in kilograms per hectare per 365-day period.

**C** = Metal concentration in milligrams per kilogram of total solids (dry weight basis).

**AWSAR** = Annual whole sludge application rate in metric tons per hectare per 365-day period (dry weight basis).

**0.001** = A conversion factor.

(2) To determine the AWSAR, equation (1) is rearranged into equation (2):

Figure: 30 TAC §312.49(2)

(2)

$$\text{AWSAR} = \frac{\text{AMLR}}{C \times 0.001}$$

=

$$\frac{C}{0.001}$$

(3) The procedure used to determine the AWSAR for a sewage sludge is presented in Appendix A.

Figure: 30 TAC §312.49(3)

#### Appendix A

##### PROCEDURE:

1. Analyze a sample of the sewage sludge to determine the concentration for each of the metals listed in Table 4 of §312.43 of this title (relating to Metal Limits) in the sewage sludge.
2. Using the metal concentrations from Step 1 and the AMLRs from Table 4 of §312.43(b)(4) of this title (relating to Metal Limits), calculate an AWSAR for each metal using equation (2) above.
3. The AWSAR for the sewage sludge is the lowest AWSAR calculated in Step 2.

**Source Note:** The provisions of this §312.49 adopted to be effective October 13, 1995, 20 TexReg 7840.

#### **§312.50. Storage and Staging of Sludge at Beneficial Use Sites.**

(a) Except as provided in subsection (b) of this section, storage of sludge at a beneficial land application site must not exceed 90 days. Storage is allowed only when the following requirements are carried out.

- (1) Written authorization must be obtained from the executive director prior to construction of the storage area.
- (2) The storage area must be operated and maintained to prevent surface water runoff and to prevent a release to groundwater. Discharge of storm water or wastewater which has come into contact with sewage sludge is prohibited. The storage area shall be designed to collect such runoff. Any runoff collected during the storage of sewage sludge shall be disposed in a manner to prevent a release to groundwater.
- (3) The storage area shall be designed, constructed, and operated in a manner which protects public health and the environment.
- (4) The storage area must be lined to prevent a release to groundwater. Natural or artificial liners are required for leachate control. A natural liner or equivalent barrier of one foot of compacted clay with a permeability coefficient of  $1 \times 10^{-7}$  cm/sec or less must be provided. Various flexible synthetic membrane lining materials may be used in lieu of soil liners if prior written approval has been obtained from the executive director. The registrant shall furnish certification by a licensed professional engineer or licensed professional geoscientist that the completed storage area lining meets the appropriate criteria described in this section prior to using the facilities. The certification shall be signed, sealed, and dated by a licensed professional engineer or licensed professional geoscientist.

(5) The application shall outline measures to be taken to minimize vectors and to avoid public health nuisances such as odors.

(6) The storage area shall be fenced or other methods shall be used, if necessary to control access by humans or domestic animals.

(7) Berms or dikes shall be constructed to contain the waste without leakage.

(8) Liquid sludge must be stored in an enclosed vessel.

(9) Processing of sludge is prohibited unless a permit is obtained from the commission.

(10) In the event a person who prepares sewage sludge that is applied to the land or who applies sewage sludge to the land, is subject to an Odor Control Plan as described in §312.44(j)(4) of this title (relating to Management Practices), that person must comply with the terms of the applicable Odor Control Plan in order to store sewage sludge at a beneficial use site.

(b) Up to an additional 90 days of storage will be allowed with the prior approval of the appropriate Texas Commission on Environmental Quality regional office, for reasons associated with application area flooding, saturated soils, or frozen soils.

(c) Staging of sewage sludge on-site, prior to land application, is allowable without executive director approval. Staging of sewage sludge may only occur for a maximum of seven calendar days per location within the beneficial land application site. Up to an additional 14 days of staging sewage sludge will be allowed with the prior approval of the appropriate Texas Commission on Environmental Quality regional office, for reasons associated with application area flooding, saturated soils, frozen soils, or equipment failure. Written records of the location of each staging area and timeframe in which sewage sludge was staged shall be retained by the operator and be readily available for review by a TCEQ representative. The operator shall stage the sewage sludge away from odor receptors in order to:

(1) prevent off-site dust migration from the staging area; and

(2) prevent nuisance odors.

**Source Note:** The provisions of this §312.50 adopted to be effective October 13, 1995, 20 TexReg 7840; amended to be effective September 1, 2003, 28 TexReg 6300; amended to be effective October 2, 2014, 39 TexReg 7756.

